# INDUCTIVE PROCEDURES IN BUSINESS EDUCATION: THE MARKETING RESEARCH CLASS

Richard S. Jacobs and John W. Barnes, University of Texas at El Paso, Department of Marketing and Management 500 W. University, El Paso, TX 79968, (915-747-7772)

## ABSTRACT

Increasingly, inductive procedures are becoming a part of today's business college curriculum. However, little use has been made of the inductive method in the marketing research class. First, we provide a brief comparison of the deductive and the inductive modes of inquiry. Next, we present a method of using the inductive procedures in the classroom. Finally, we examine the advantages of inductive procedures over the traditional deductive approach in the context of a marketing research class.

## INDUCTIVE PROCEDURES IN BUSINESS EDUCATION: THE MARKETING RESEARCH CLASS

Educators and practitioners alike express concern that the emphasis in many college classrooms is on the theoretical and conceptual side of business education, rather than the pragmatic and vocational (Malhotra, Tashchian, and Jain 1989; Barnes and Byrne (1990). Similarly, others believe that the attention given to testing and proving abstract theoretical paradigms does little to provide students with the competitive leverage they will need in an increasingly volatile job market (e.g., Behrman and Levin 1984). In a corresponding manner, Ramocki (1994) argues that educators should place more emphasis on teaching creativity in the classroom.

Accordingly, many conventional business colleges have begun to shift attention away from the philosophical and scientific nature of business thought and toward application-centered learning (e.g., Parasuraman and Wright 1983). Methods facilitating such learning are essentially experiential, and include the live case, the project method approach (PMA), and narrative modes such as in-depth interviewing and analysis of business encounters (Malhotra, Tashchian, and Jain 1989).

Approaches to experiential and application-centered learning entail a shift in educational methods from deduction or logic-driven reasoning to a process of inference drawn from "real-world" data. This method of implying meaning from a set of raw data has been called the "inductive procedure" (Hunt 1991). The procedure provides categorization by analysis of a specific set of data (Hunt 1991), allowing students to inductively group cases based on their own assessment of similarities among a large number of cases.

We propose that the inductive procedure provides advantages over deductive methods in the pursuit of teaching objectives. Because of the emphasis placed on inference-drawing by the students, this method adds a critical dimension – the ability to make decisions in an uncertain environment with limited information. The method also addresses the need for students to develop the salient characteristics related to creativity (e.g., tolerance for ambiguity, willingness to persevere and grow, risk taking, and courage of conviction (Ramocki 1994)). While the inductive method offers advantages to the student to foster creative skills, deductive methods such as exploratory data analysis will continue to have a place in the pedagogy of statistical applications.

To understand the inductive procedure and its application in the marketing research class, we must first understand how this method differs from the more traditional deductive approach. Because both deduction and induction represent inquiring *modes*, or paths to knowledge (Churchman 1961, 1968), we will first examine the deductive inquiry process, and then the inductive. We follow this discussion with a presentation of our method for the classroom.

## DEDUCTIVE MODES OF INQUIRY

Inquiry is the process of selecting among choices in the pursuit of a goal or objective (Churchman 1961; Ackoff and Emery 1972). Deductive inquiry is best illustrated by prevalent inquiry modes that rely upon the development and testing of *a priori* premises and hypotheses. Two such modes are Leibnitzian and Hegelian inquiry.

**Leibnitzian.**

Developed from the deductive philosophy advanced by the German mathematician Leibnitz, this mode maintains that events can only be assessed through a process of pure reason and deduction (Mokwa and Evans 1982; Mitroff and Kilmann (1978). Leibnitz held that assessment requires a premise, which is reasoned through to a logical conclusion. This mode is centered on theory development: once theoretical hypotheses are developed, they are validated or denied through testing (Churchman 1961). The efficacy of the mode lies in its ability to determine how well the hypothesis is specified (i.e., how well the hypothesis holds under validation/falsification tests) (Mason and Mitroff 1973). Because the testable strength or accuracy of a premise drives this mode of inquiry, empirical observation is not germane.

**Hegelian.**

The German philosopher Hegel maintained that the understanding of events is best achieved through simultaneous evaluation of opposing (i.e., dialectical) hypotheses or models (Mason 1969). Theories or models that are in conflict (i.e., antithetical) may be tested to determine the "one best" model that fits a given set of data.

These two deductive philosophies contain three common elements: (1) in both cases, an original premise, theory, or model replaces empirical observation; (2) there is one "best" model or explanation that fits the available data, and (3) confirmation or disconfirmation through testing is required to find that model.

## INDUCTIVE MODES OF INQUIRY

Unlike deductive inquiry, induction relies upon investigation into often complex and ambiguous phenomena that may result in several, one, or no explanations of the phenomena. To achieve these explanations, generalized conclusions may be reasoned from facts drawn from empirical observation (Mokwa and Evans 1982). Two important inductive modes are Lockeian and Kantian inquiry.

**Locheian.**

The English philosopher Locke reasoned that empirical judgments, or fact nets may be drawn from observation of empirical phenomena (Churchman 1961, 1968). Assessment of fact nets is then achieved through a consensus among experts (i.e., those already familiar with the phenomena in question). Because this method relies upon *agreement* rather than hypothesis testing, several possible explanations may result, none of which may represent the best model. The use of focus groups in qualitative marketing research illustrates this approach.

**Kantian.**

The Germany philosopher Kant believed that events are best understood by evaluating several different, but complementary *a priori* models (Churchman 1961; Mitroff and Kilmann 1978). In this sense, Kantian inquiry might be thought of as deductive, but the mode also allows the use of alternative models to examine fact nets *post hoc*, making it inductive. Like Hegelian inquiry, the Kantian mode relies on *synthesis* among different viewpoints. However, this synthesis may be achieved inductively rather than deductively, because it is driven by *consensus*, rather than by forcing a deductive conclusion from antithetical explanations of the same event.

## COMPARISON OF INDUCTIVE AND DEDUCTIVE MODES

Inductive processes therefore differ from deduction in several key areas: (1) they rely upon observation of empirical events rather than the development of premises *a priori*; (2) they allow for the development of different explanations of the same event, rather than attempting to "prove" the superiority of a single model; (3) they rely upon a consensus among observers of the event, in hope of better *understanding* the event, rather than attempting to justify a particular explanation; and (4) observers of the event are experts in the sense that they are already familiar with the phenomena and have greater understanding than do *naive scientists* who rely on deductive processes to validate a premise-driven theory.

The above discussion suggests that deductive processes may be more appropriate than the inductive method for structured problem solving in a classroom environment (i.e., problems that may be systematically evaluated, in which one best answer is possible). Nevertheless, many problems encountered by marketing organizations in today's complex and uncertain business environment do not lend themselves to deductive processes. In such cases, creative, unstructured problem solving is required, necessitating the use of inductive procedures to best understand the problem in the face of limited and perhaps contradictory information.

Because of demands from the business community for creative graduates who can *identify* and solve problems, inductive procedures have found their way into business classes such as marketing strategy. On the other hand, the marketing research class, following the classic deductive mode, and relying on theory and abstract concepts has frequently been regarded as a home for positivist, quantitative decision-making (Malhotra, Tashchian, and Jain 1989). While such an approach may follow a deductive inquiry path, from many students' perspective the educational experience is less interesting and meaningful (e.g., Parasuraman and Wright 1983). We believe that the following method provides an interesting, meaningful, and creative experience for the marketing research students.

## THE SETTING

The marketing research course is taught every semester at a southwestern university located near the U.S.- Mexico border. The classes typically consist of two sections, each containing twenty to twenty-five upper level undergraduate male and female students. Many of the students represent the first generation of their family to attend a college or university. The class follows a format of lecture and discussion. As a critical part of this format, a two-phase marketing research project is assigned. Phase one involves the traditional deductive approach. In this phase, the students conduct and prepare a written transcript of open-ended interviews with subjects. Phase two focuses on students using inductive procedures to categorize the interviews into meaningful groups (i.e., Lockeian fact nets). The project culminates with the students preparing and submitting a complete research report detailing the project.

## THE PROJECT

The project is introduced to the students after one third of the semester has elapsed. This timing allows the class to develop understanding of research designs, qualitative data, and probing techniques before beginning the project. Because the critical incident technique (CIT) forms the basis for the data collection portion of the research project, CIT as applied in marketing by Bitner, Booms, and Tetreault (1990) is introduced through lecture and discussion. Areas of current interest to marketers are *chosen* for the project topics. Completed projects have focused on customers' and service providers' most satisfactory and most dissatisfactory service encounters. However, many other areas of interest may be studied using this method.

### Phase One - The Interviews

The first phase of the research project requires that each student interview five subjects using the CIT. To facilitate the interviewing process, the students are provided with an open-ended questionnaire (see Exhibit 1). In-class role playing familiarizes the students with probing methods and the interviewing process. Students form dyads with one student role-playing the subject and the other playing the role of the interviewer. Then the roles are reversed. These interviews are observed by the professor and feedback provided to the students. The students are then given one week to conduct and submit their first interview. The professor then critiques each interview and provides the student with written and verbal instructions on improving the interview process. Careful reading and prompt feedback by the professor are necessary at this point to guide the students on the interviewing and recording process. The students are then given two weeks to recruit and interview four additional subjects.

## EXHIBIT 1

## SERVICE PROVIDER INTERVIEW

DESCRIPTION: Each student is to interview a minimum of five (5) service providers concerning interactions with customers. Each service provider should be interviewed about their most satisfying and their most dissatisfying experiences with customers. DO NOT INTERVIEW OTHER STUDENTS FROM THE CLASS. READ THE FOLLOWING TO

THE SERVICE PROVIDER:

I am, _______, a marketing research student at _____. Our class is doing research concerning service providers' perceptions. I would like your permission to ask you a few questions. Your responses will be kept strictly confidential. If you have any questions concerning this study, you may contact ____________________.

The objective of this research is to gain understanding of services providers' perceptions of particularly satisfying or dissatisfying encounters with customers.

We are asking about the normal events that you have with customers. We want to recall incidents which were very satisfying or very dissatisfying to you. That is, we are interested in events which represent the interactions with customers that resulted in you feeling very satisfied or very dissatisfied.

To begin, would you please recall an encounter with a customer that resulted in you feeling very satisfied. (*Pause*) Now I will ask you a few questions concerning that encounter. The more specific and detailed you can be in describing your thoughts and observations regarding the encounter, the better.

1. When did the incident happen?
2. What specific circumstances led to the situation?
3. Exactly what did the customer say or do?
4. Exactly what did you say or do?
5. What resulted that made you feel the interaction was satisfying?
6. Describe the parts played by the customer, yourself, and the rules and procedures of your firm.
7. How were you treated by the customer?
8. What were your reactions to the manner in which you were treated?
9. Why do you think the customer treated you in this manner?
10. Did your reactions to the encounter result in particular actions (e.g., sale/no sale, treating the next customer differently, etc.)?

Now, would you please recall an encounter with a customer that resulted in you feeling very dissatisfied. (*Pause*) I will ask you the same questions concerning that encounter. Again the more specific and detailed you can be in describing your thoughts and observations regarding the encounter, the better.

1. When did the incident happen?
2. What specific circumstances led up to the situation?
3. Exactly what did the customer say or do?
4. Exactly what did you say or do?
5. What resulted that made you feel the interaction was dissatisfying?
6. Describe the parts played by the customer, yourself, and the rules and procedures of your firm.
7. How were you treated by the customer?
8. What were your reactions to the manner in which you were treated?
9. Why do you think the customer treated you in this manner?
10. Did your reactions to the encounter result in particular actions (e.g., sale/no sale, treating the next customer differently, etc.)?

THANK YOU FOR YOUR PARTICIPATION

For each encounter also record:
The nature of the business.
The name of the company.
The name of the service provider.

**Phase Two - The Inductive Procedure**

When all interviews are collected and reviewed by the professor, the students are assigned to four-person groups. Each group is given twenty interviews to categorize. The interviews are selected from those conducted by students from other groups. To reduce bias, care is taken to ensure that no group analyzes any of its own members' interviews. The research question along with written instructions detailing the inductive method of categorizing the interviews are provided to the students (see Exhibit 2).

**EXHIBIT 2**

Content Analysis of Service Providers Interviews

For your group project grade each group will content analyze interviews with service providers and prepare a typed report following the directions for report preparation in chapter 24 of your text. The report is due on ___ at the beginning of class.

Specific directions for content analysis.

1. Read all the satisfying interviews very carefully. As you read them you should begin to see similarities among the incidents which created satisfaction.
2. Identify the exact nature of the similarity, this becomes the basis for labeling each category of incidents.
3. Go over and over the incidents and sort them until all incidents in a category are

more similar to each other than they are to those in other categories.

4. Do the same for the dissatisfying incidents.
5. The basic research question you are to answer is; What are the events and behaviors leading to satisfying and dissatisfying service encounters from the service providers perspective?
6. The categories cannot be predetermined, they should flow from the careful readings of the interviews.
7. Content analysis of this type requires a lot of *thought*. It cannot be done in a day or two. You need to begin today, and work as an efficient and effective group in order to perform high quality content analysis of the interviews.
8. Staple the interviews together, by category, label the category, and turn in with your report.
9. If you have any questions, see me or call be at ______.

Consistent with the Lockeian mode of inquiry, the students approach the interviews as raw data, inferring their own *fact nets* (categories) from the perspective of expert observers and *judges* (having conducted interviews themselves, using the Critical Incident Technique). In keeping with Kantian inquiry, categories are determined post hoc and the fact nets are synthesized from different viewpoints (e.g., "firm responsible for satisfying encounter," "customer responsible," "service provider responsible," etc.).

Inferring fact nets from the raw interview data may at first present an obstacle for many students, who are likely to be preconditioned to deductive methods in their other business classes. Therefore, examples from areas other than their research domain are provided to assist the students to develop greater understanding of the method they are to follow. For example, when the students interviewed service providers, a factory situation was described in which workers are asked questions about their satisfaction. Some factory workers might report that safety equipment is the leading contributor to their satisfaction, others might say it is management's concern for the employees, while others may say that it is their pay that determines their satisfaction. Consistent with Kantian inquiry, this example would likely lead to the development of three groups – safety equipment, management, and pay. By using an example outside the domain of the current study, the professor does not bias or lead the students in determining the categories that flow from their analysis. The students then begin their analysis of the interviews.

Because this type of project is new to the students, they often complain that the project is ambiguous – that they do not understand the assignment. The processor must be supportive and provide understanding and reassurance at this point. Yet, additional instructions beyond slight elaboration of the written instructions or repeating the example are not advisable. The professor wants the students to persevere and work through their apprehensions. As they proceed, the students' uncertainty is further evidenced by their concerns and questions about whether their tentative categories are appropriate. Again, the *professor* should not examine the interviews or the students' categories at this time. The best way to answer their "appropriateness" questions is to explain that they, as *judges*, must make the decisions. An important aspect of the inductive procedure is for the students to learn that there can be more than one right answer. Equally important is that the students persevere and overcome the obstacles themselves. We believe that it is critical that the professor *does not* interfere with the process at this time.

Upon completion of the project, the categories and reports are evaluated by the professor. From our experience we are convinced that undergraduate marketing research students perform the inductive procedures well. The category labels and the corresponding interviews indicate that the students, working in teams and arriving at a consensus, are able to group and label the categories in a reasonable manner. Student comments regarding the project are generally favorable. They find the project beneficial to their learning experience, and would like to do similar projects in other classes. Peer evaluations indicate that most of the groups work well together.

Because phase two (the inductive phase) of the project involves very little assistance from the professor, the students are forced to make decisions based on the inductive process. This addresses the issues raised by Malhotra, Tashchian, and Jain (1989) and Barnes and Byrne (1990). The experience should also provide the students with the competitive advantage needed in a volatile job market (Burger and Schmidt 1987). The salient characteristics of creativity are experienced and likely internalized.

## CONCLUSION

The use of inductive procedures is slowly making its way into today's business college classroom as a preferred instructional methodology. Yet, little use has been made of this method in the marketing research class, because of the prevalent use of deductive and logical reasoning-based methods. To better understand the nature of the inductive procedure, we provided a brief review of deductive versus inductive modes of inquiry. A critical examination of the current use of the inductive procedures in a marketing research class demonstrates that these procedures offer unique advantages for students to develop inductive reasoning and creativity through inferential analysis and categorization skills. These skills acquired by the students can help to set them apart from others in today;s marketplace.

## REFERENCES


Ackoff, R.I. and F. E. Emery, (1972). On Purposeful Systems Chicago: Aldine-Atherton.

Barnes E.J. and J. Byrne, (1990). "An Integrated Teaching/Learning Exercise Around a Market Research Project," Journal of the Market Research Society, (number 4), 537-550.

Behrman, Jack N. and Richard J. Levin (1984). "Are Business Schools Doing Their Jobs?" Harvard Business Review, (January/February), 140-147.

Burger, Kenneth J. and Sandra L. Schmidt (1987). "Integrating Information Management Skills in to the Marketing Curriculum: An Example Using the Marketing Research Course," Journal of Marketing Education, (Spring), 12-18.

Churchman, C.W. (1961). Prediction and Optimal Decisions, Englewood Cliffe, NJ: Prentice-Hall.

Churchman, C.W. (1968). A Challenge to Reason, New York: McGraw-Hill.

Hunt, Shelby D. (1991). Modern Marketing Theory: Critical Issues in the Philosophy of Marketing Science, Cincinnati, OH: South-Western Publishing Co.

Malhotra, Naresh K., Armen Tashchian, and Arun K. Jain (1989). "The Project Method Approach: An Integrated Teaching Took in Marketing Research," Journal of Marketing Education, (Summer), 32-40.

Mason, Robert O. (1969). "A Dialectical Approach to Strategic Planning," Management Science, (number 5), 408-413.

Mason, Robert O. and Ian D. Mitroff (1973). "A Program for Research on Management Information Systems," Management Science, (number 5, 475-485.

Mitroff, Ian D. and Ralph H. Kilmann (1978), Methodological Approaches to Social Sciences, San Francisco, CA: Jossey-Bass.

Mokwa, Michael P. and Kenneth R. Evans (1982). "Knowledge and Marketing: Exploring the Foundations of Inquiry," in Marketing Theory: Distinguished Contributions, Stephen W. Brown and Raymond P. Fisk, eds., New York: Wiley & Sons, pp. 170-179.

Parsuraman, A. and Deborah G. Wright (1983). "A Study of Marketing Research Jobs for College Graduates: Implications for Education," in 1983 AMA Educators' Proceedings, Patrick J. Murphy, et al., eds., Chicago, IL: American Marketing Association, pp. 181-185.

Ramocki, Stephen P. (1994), "It is Time to Teach Creativity Throughout the Marketing Curriculum," Journal of Marketing Education, 16, (Summer): 15-25.